

AMENDMENTS TO THE CLAIMS

IN THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application. Please amend the claims as follows.

Claims 1-20 (cancelled).

21. (Currently Amended) A method for recovering nylon from a waste material comprising nylon, comprising:

contacting the waste material comprising nylon with an alkanol-containing solvent at an elevated temperature between 130 °C and 155 °C and at a pressure higher than an equilibrium vapor pressure of the alkanol-containing solvent at the elevated temperature, and between 250 400 psig to 600 psig, and maintaining the pressure for a dissolution time sufficient to dissolve the nylon, thereby dissolving the nylon in the alkanol-containing solvent, wherein the combination of the pressure, temperature and the dissolution time provide a desired yield of nylon of at least 82%;

removing the alkanol-containing solvent containing dissolved nylon from any undissolved solids;

decreasing the temperature of the alkanol-containing solvent containing dissolved nylon to between 120 °C and 130 °C to precipitate dissolved nylon to generate precipitated nylon in remaining solution; and separating the precipitated nylon from the remaining solution.

22. (Previously Presented) The method of claim 21, wherein the waste material comprises a floor covering material.

23. (Previously Presented) The method of claim 21, wherein the nylon is nylon 6,6.

24. (Previously Presented) The method of claim 21, wherein the alkanol-containing solvent is substantially free of glycols or other polyols.

25. (Previously Presented) The method of claim 21, wherein the alkanol-containing solvent comprises an alkanol selected from the group consisting of methanol, ethanol, propanols, butanols, and mixtures thereof.

26. (Previously Presented) The method of claim 21, wherein the alkanol-containing solvent comprises a mixture of alkanol and water.

27. (Previously Presented) The method of claim 26, wherein the alkanol is present in an amount ranging from about 40 wt% to about 90 wt% of the solvent.

28. (Previously Presented) The method of claim 27, wherein the alkanol-containing solvent comprises a mixture of about 80 wt% ethanol in water.

29. (Currently Amended) The method of claim 21, wherein the pressure during the contacting ranges from ~~250~~ 400 psig to ~~400~~ 500 psig.

30. (Previously Presented) The method of claim 29, wherein the elevated temperature is about 145 °C.

31. (Previously Presented) The method of claim 21, wherein the pressure higher than the equilibrium vapor pressure of the alkanol-containing solvent at the elevated temperature is attained by introducing an inert gas into the reactor.

32. (Previously Presented) The method of claim 21, wherein the pressure higher than the equilibrium vapor pressure of the alkanol-containing solvent at the elevated temperature results at least in part from the pressure head of the alkanol-containing solvent entering the reactor.

33. (Previously Presented) The method of claim 21, wherein the waste material comprises nylon-containing floor covering materials which comprise carpet or carpet tile, or mixtures thereof.

34. (Previously Presented) The method of claim 33, wherein the carpet or carpet tile contains nylon 6,6.

35. (Previously Presented) The method of claim 21, wherein the dissolution time is between 15 and 45 minutes.

36. (Previously Presented) The method of claim 35, wherein the dissolution time is between 15 and 37 minutes.

37. (Previously Presented) The method of claim 36, wherein the dissolution time is between 15 and 23 minutes.

38. (Previously Presented) The method of claim 21 wherein the temperature, the pressure and the dissolution time result in a yield of 82-100%.